Greater sage-grouse, icons of the American West, are in trouble across most of their range. But the large expanse of sagebrush steppe on INL's Site remains a stronghold for the birds.

Greater sage-grouse find sanctuary on INL Site

By Mike Wall, *INL Communications and Governmental Affairs*

Bob Starck clambers into the bed of his big Dodge pickup and stands by the back window. He points his binoculars at a patch of roadside sagebrush, hazy and blue-gray in the predawn gloom.

"There are about a dozen out there," he says, his breath frosting up in the chilly air. It's May, but Starck is bundled up in a winter coat and knit cap. A cold wind blasts across Idaho National Laboratory's desert Site, about 45 miles west of Idaho Falls. "Yes, I'm counting 12."

Starck ducks back into the Dodge's cab. Safely out of the wind, he fills in a data sheet: 12 greater sage-grouse at the Railroad Lek, his first survey location of the morning. Starck has six more spots to visit today, but he's off to a good start. That's not too surprising; INL's Site is a refuge of sorts for the beleaguered grouse, an island of good sagebrush habitat in a sea of wheat fields, potato fields and degraded rangelands.

"These birds are icons of the American West," Starck says as the Dodge's engine roars to life. "I love seeing them."

Biologist Bob Starck, bundled up against the pre-dawn chill, counts grouse at the Railroad Lek.

Decline of a sagebrush specialist

Icons or not, greater sage-grouse are having a tough time these days. In the last 100 years, their population has fallen by at least 67 percent, to just a few hundred thousand. The chicken-sized birds are no longer found in large chunks of their former range, having been extirpated from British Columbia, Nebraska, Oklahoma, Kansas, Arizona and New Mexico.

On the Site, a rolling sagebrush sea laps against mountain slopes. Here, Big Southern Butte rises 2,500 feet above the valley floor.

In March of this year, the U.S. Fish and Wildlife Service concluded that greater sage-grouse warrant protection under the Endangered Species Act. But the agency declined to list the bird, saying that other species are in even worse shape and thus must take priority.

The greater sage-grouse is in trouble because its habitat, the sagebrush steppe, is in trouble. Sagebrush once covered about half of the American West — 150 million acres or so. But conversion of sagebrush to rangeland and cropland has reduced that area dramatically, to perhaps 20 million acres. And the sagebrush that's left faces a number of threats, from development to aggressive non-native species such as cheatgrass.

This is bad news for grouse, which depend heavily on sagebrush. In the winter, Starck says, the plant makes up 99 percent of the bird's diet.

A sagebrush sanctuary

INL's desert Site is one place the birds still call home. The Site's 890 square miles are mostly wide-open and wild; roads and buildings, such as INL's Advanced Test Reactor, occupy only 3 percent of the land.

"The Site is a large area of relatively undisturbed sagebrush steppe," says wildlife biologist Jericho Whiting. "It's buffered from agriculture and from recreational activities."

Like Starck, Whiting works for Stoller, an environmental consulting and engineering firm. The U.S. Department of Energy (DOE) has funded greater sage-grouse research at INL since 1995, and Stoller has been overseeing much of this work for the past decade.

One arm of this research is a telemetry study, contracted out to the Wildlife Conservation Society, which radiocollars birds to gather data on habitat use, nesting behavior and mortality. And Stoller biologists perform lek surveys, which give them rough and relative population counts, every spring. That's what Starck is doing on this cold May morning.

Leks are areas where males gather en masse during the mating season to display and — they hope — attract the attention of females. Lekking behavior isn't uncommon; many grouse species lek, as do some ducks, hummingbirds, birds of paradise and other species.

Leks are places where male grouse gather in the spring to strut, call and — they hope — attract some female attention.

Greater sage-grouse on the Site lek from March to May. Males gather in relatively open areas, such as clearings and road shoulders, a little before dawn. Until 90 minutes or so after sunrise, they strut this way and that, fanning out their spiky tail feathers and emitting eerie, high-pitched drumming noises. They make these sounds by rapidly inflating and deflating the large yellow vocal sacs on their chests.

Lek sizes can vary greatly, from two or three males to more than 100. Grouse scrap for possession of the best spots — generally, positions near the center of the lek where they'll be most visible to the drab females watching from the weeds. These fights can be serious business.

Watch the dramatic display of lekking male greater sage-grouse.

"They'll pull each other's feathers with their beaks," says Starck, who's been helping out with lek surveys since retiring as an INL cultural resources coordinator a few years ago. "But mostly it's wing slapping. They'll use their big, powerful wings. It's almost like boxing."

These efforts will be in vain for the majority of males. On most leks, a few dominant males get almost all the notice, and almost all the matings.

Toward a grouse conservation plan

All of this research — the radiotelemetry study and the lek surveys — will help scientists protect and manage greater sage-grouse populations on the Site. Stoller and DOE are using the data to formulate a Candidate Conservation Agreement for the birds. The CCA, which should be finished by the end of 2011, lays out to the Fish and Wildlife Service what actions DOE will take to minimize threats to grouse.

"The CCA will help conserve strongholds for grouse while letting DOE complete its missions at INL," Whiting says. "It's a win-win."

There are a lot of birds, and a lot of habitat, left to preserve on the Site. So far, Whiting says, Stoller's survey work has identified about 40 active leks.

Watch a video summarizing some of the grouse research currently being conducting at INL.

"Across the range of the species, greater sage-grouse aren't doing very well," Whiting says. "But on the Site, they seem to be doing all right."

By 8:30 a.m., Starck has finished his rounds for the day. Across all seven leks, he has counted more than 80 male grouse. He has to drive past the Railroad Lek, the first spot he surveyed this morning, on his way back to town. He stops there briefly to check on the birds, curious if they're still displaying despite the late hour.

And there they are — a dozen male grouse, strutting in tight, proud circles and drumming vigorously for whoever might be watching.

"Keep doing your thing, boys," Starck says, smiling as he shifts the Dodge back into drive. "Good luck to you."

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